

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number  
**WO 2005/004570 A1**

(51) International Patent Classification<sup>7</sup>:  
3/46, 3/00

**H05K 7/14,**

(71) Applicants and

(72) Inventors: **HERMKENS, Gerald, A., J.** [NL/NL]; Maasbrachterweg 99, NL-6101 XV Echt (NL). **THEELEN, Roger** [NL/NL]; Akeleihof 84, NL-6043 WS Roermond (NL). **SMEETS, Marcel** [NL/NL]; Parklaan 42, NL-6045 BT Roermond (NL). **SPEETJENS, Frank** [NL/NL]; Uno-straat 15, NL-6336 BR Hulsberg (NL). **THOOLEN, Peter, J., M.** [NL/NL]; Hoogstraat 9, NL-6102 XR Echt (NL).

(21) International Application Number:

PCT/IB2004/002560

(22) International Filing Date:

8 July 2004 (08.07.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(74) Agent: **FISCHER, Franz**; IPTO AG, Lorrainestrasse 4, P.O. Box 594, CH-3000 Bern 25 (CH).

(30) Priority Data:

60/485,765

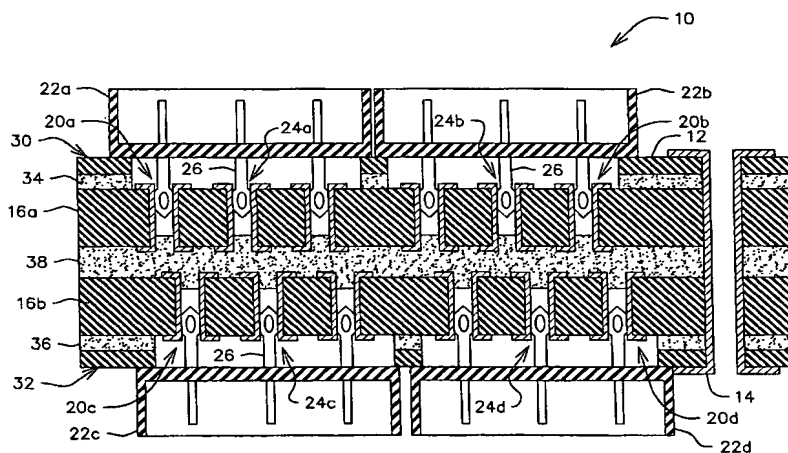
8 July 2003 (08.07.2003) US

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (for all designated States except US): **VIASYS-TEMS GROUP, INC.** [US/US]; Suite 4001, 101 South Hanley Road, St. Louis, MO 63105 (US).

[Continued on next page]

(54) Title: METHOD FOR MANUFACTURING A MIDPLANE



(57) Abstract: A method for manufacturing a mid-plane. a multi-layer board having a connection assembly is provided and a layer with a channel formed therein to define a perimeter of a connector area is provided. The layer is bonded to the multi-layer board such that the connector area overlaps the part of the connection assembly of the multi-layer board. At least a portion of the connector area in the layer is removed to expose the connection assembly of the multi-layer board. A rigid multilayer is also disclosed. The rigid multilayer includes a multilayer board and a layer. The multi-layer board has a connection assembly. The layer has a channel formed therein to define a perimeter of a connector area. The layer is bonded to the multi-layer board such that the connector area overlaps the connection assembly of the multilayer board. The connector area can then be removed such as by depth controlled routing. As will be understood by one skilled in the art, the depth tolerance is not critical because the layer is pre-formed with the channel prior to formation of the rigid multi-layer.



(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— *with international search report*